ABSTRACT OF THE DISCLOSURE

PREPARATION OF PATTERNED DIFFUSION MEDIA

Gas diffusion media for use in fuel cells are provided that contain a pattern of deposited hydrophobic polymer such that less than 100% of the surface of the diffusion media is covered with hydrophobic polymer. The media are made by first wetting a sheet of carbon fiber paper in an aqueous emulsion of the hydrophobic polymer. The wetted sheet is contacted with a pattern member containing one or more openings oriented to correspond to a predetermined or desired pattern of hydrophobic polymer deposition. While still in contact with the pattern member, the sheet is heated or otherwise treated to cause evaporation of the water from the sheet. Evaporation while in contact with the pattern member takes place in such a way that hydrophobic polymer is concentrated in the sheet at the openings of the pattern member by the process of evaporation.